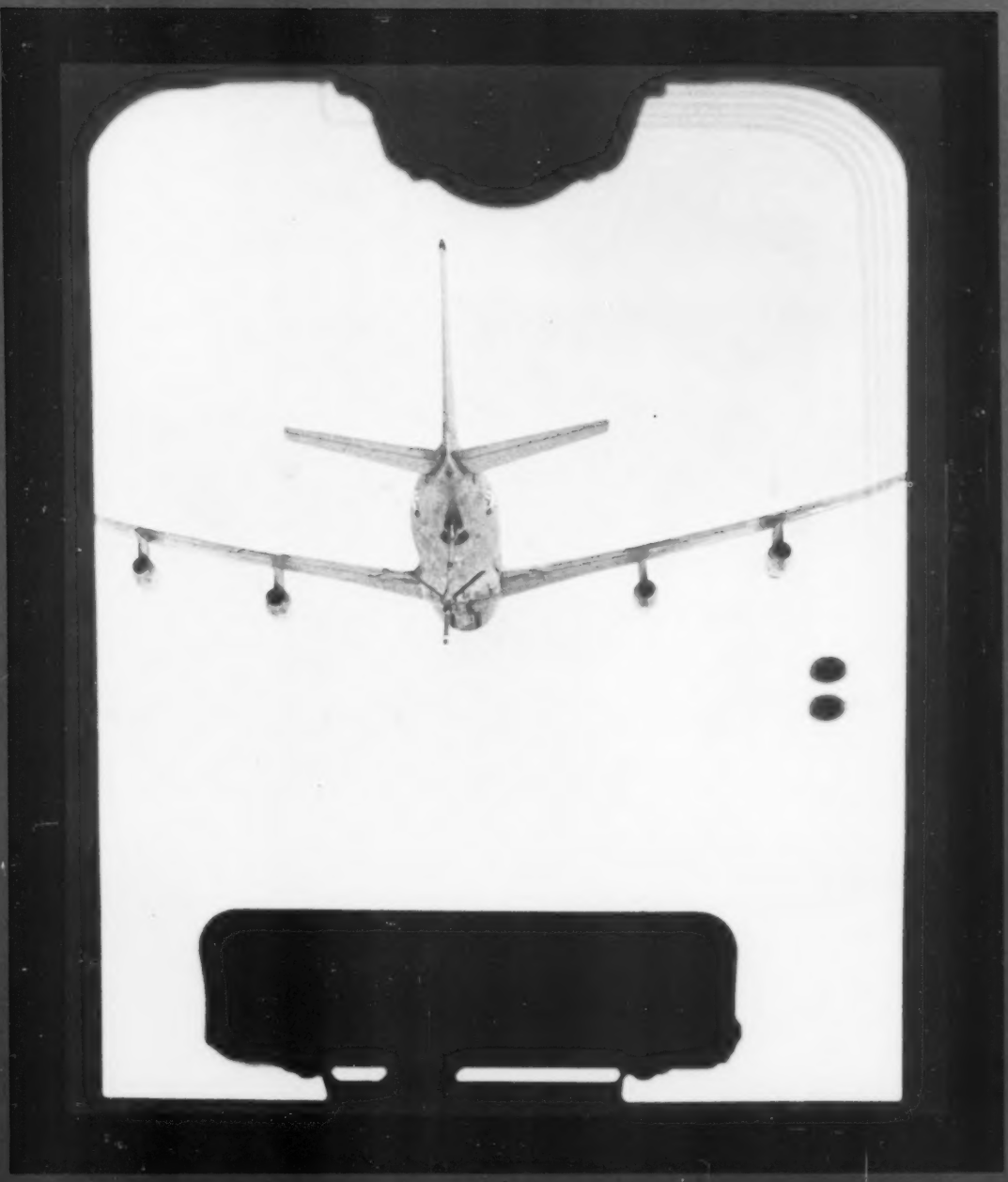
The MAC Flyer

FEBRUARY 1982



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The MAC Flyer

MILITARY AIRLIFT COMMAND

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For Greater Safety and Efficiency in MAC Air Operations.

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The MAC Flyer is published by the Directorate of Safety, Military Airlift Command, and is authorized until 24 March 1982, unless authorized to continue before that date. The contents are informative and not regulatory or directive. Names of people and places in mishap stories are fictitious; photos in mishap stories are representative and not necessarily of the aircraft or equipment involved. Information in any article may not be construed as incriminating under Article 31, UCMJ.

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Cover Photo by Capt Gene Clouse

INCORRECT VOLUME NUMBER, SHOULD READ
VOLUME 29.

I Cannot Tell A Lie!

Yessir. Old George never told a lie. Just look at him standing there, hatchet in hand with his father pinned under the tree. (As the story goes, G.W.'s father was only slightly injured—not even a reportable mishap—although we can't say the same for young George's veracious rear after his father got out from under the tree!) Anyway, we're sure George would have wanted you to enter the 1982 MAC Flying Safety Writing Contest. Besides, this is your chance to win a beautiful desk set, handsome wall plaque or (ta dum!) a C.R. Terror T-shirt. Come to think of it, *everyone* who enters, whether you win or not, will receive a C.R. Terror T-shirt and a year's subscription to *The MAC Flyer*. So, fellow ink-stained wretches, sally forth with thy literary plums. We, too, cannot tell a lie. Forsooth, yonder deadline approaches with great haste. Waste not thy time! Submit thy entry by 31 March 1982 or ye, unlike Mr. Washington, will have missed the proverbial boat! Follow yon simple instructions and thou wilst see how easy 'tis.

The Rules

The 1982 MAC Flying Safety Writing Contest is conducted according to MACR 900-3 and the following rules. All entries must be original, unpublished, and postmarked no later than 31 March 1982. Stories must be between 1,000 and 3,000 words long (about 6 to 14 double-spaced typed pages); poetry should be about 75 to 100 lines. Entries must contain an aviation safety message. Manuscripts must be double-space typed and submitted in two copies. Identify entries by title only, and attach a cover sheet showing the author's name, address, phone number and unit. Also, the cover sheet should contain a brief autobiography.

The contest is open to anyone. Entries qualifying under the above rules earn their author a free C.R. Terror T-shirt (so indicate your size) and a one-year subscription to *The MAC Flyer*. However, contest prizes (desk sets and plaques) may only be awarded to military and civilian employees of the Department of the Air Force or Air Reserve Forces. Other entrants may be selected for Honorable Mention in a Special Category. All winning stories will be published in *The MAC Flyer*. Entries should be addressed to:

Safety Writing Contest
HQ MAC/IGFE
SCOTT AFB IL 62225

"The Rock" Slips

by SMSgt Larry L. Austin
1550 ATTW
Kirtland AFB, New Mexico

Tears streamed down their cheeks. The student jumpmaster and the pararescue (PJ) instructor were chilled. Their faces stung and their fingertips were numbed from the icy windblast. It was growing darker, and their watery eyes made the target difficult to see. Both were anxious to get this jump completed. They were also tired of listening to the pilot's complaints: "Can't you guys hurry it up back there?" . . . "We've got night transition to shoot, and you're using up our time" . . . "I don't see why you PJs need to jump from helicopters anyway." The whole operation was falling apart, and the PJ instructor was near total frustration. He wanted to get out of the cold wind, so to speed up the drops he pointed out the target to the student. Supporting himself with only one hand, the student leaned far outside the aircraft to get a better look. At that moment the aircraft banked sharply to the left, throwing the student out the door. Frantically, the instructor grabbed for the student, but it was too late. He was gone.

The instructor quickly looked to see their position in the jump pattern; they were on final over the drop zone. No sweat, he thought. He'll be a long way from the target, but he'll be okay. The instructor informed the pilot of what had happened. He then reached toward the tiedown ring to recover the student's static line so the aircraft would be clear to turn. It wasn't there! Out of the corner of his eye, the instructor saw something that made his heart stop. There, fastened securely to a seat, was the student's reserve parachute. The pararescue student had no way to deploy his chute. He had made his last jump!

Master Sergeant Rock awoke with a start. Sweat covered his body and soaked his bed sheets. His heart was pounding as if he had just completed a 5 mile run. What a nightmare! But this was no run-of-the-mill nightmare; this same vision had haunted Sergeant Rock since that night several years earlier, when this dream had nearly become a reality. The events that had led up to that nearly fatal night were not unique. They had occurred many times in Sergeant Rock's career. He should have recognized the dangerous situation that was developing.

As NCOIC of the detachment's pararescue section, Master Sergeant Rock had been trying for months to convince the commander and operations officer that the PJ team needed a night jump. He had explained the pararescue currency requirements over and over. He also explained the need to qualify his younger pararescuemen as jumpmasters. The young PJ jumpmaster students had been in training for over a year. The only requirement remaining before they could be qualified as jumpmasters was to perform jumpmaster duties at night.

The stan-eval pilot had been fighting Sergeant Rock every step of the way. Captain Logan had convinced the commander that a night drop wasn't necessary, and that the PJs only jumped from helicopters for fun anyway. He also insisted that the unit's new copilots needed the night flying time more than the PJs needed their jumps. After months of explaining and pleading, Sergeant Rock finally succeeded in getting two hours scheduled for PJ drops during a night transition flight. He had personally assured the commander things would go

smoothly. Sergeant Rock promised that the PJs would not need more than 2 hours. To ensure everything went as planned, Rock scheduled himself as the pararescue instructor for the flight. After all, most of his experience was on helicopters. He had been making night jumps for over 15 years; and he had instructed PJ students for over 12 years. He was feeling good about his small "victory" and was determined to prove a point.

But Rocky's battle with Captain Logan was not over. The Captain had scheduled himself as "aircraft commander" for the flight. Although this bothered Rocky a little, he wasn't too worried about it. The two students he was training were both sharp as tacks and had excelled in their training to this point. They had plenty of jumpmaster practice during the day. Just the news that a night jump had been scheduled raised the morale of the pararescue section several notches. Becoming a jumpmaster was an important step in a young PJ's career. They were finally going to get to show "the Rock" what they could do.

On the way to the briefing, Sergeant Rock noticed the wind sock near the operations building was hanging limp, and there wasn't a cloud in the sky. It was cold, but it seemed like it was always cold. We're going to have a good jump, he thought. I just hope the aircraft doesn't break. He had sent the ground party to the DZ over an hour before takeoff. This was just another measure to ensure nothing delayed the jump.

The aircraft checked out perfectly and the first student jumpmaster completed his briefings like an old pro. "The Rock's" plan called for the student jumpmaster, another jumper and himself to fly to the drop zone and for the students to jump. After landing, they would pick up another jumper and the second jumpmaster candidate, then take off and make their second jump of the night. Rock would stay on board the aircraft until the second jump, since he was the instructor for both student jumpmasters. The plan had worked on day jumps, and there was no reason it couldn't work at night. The landing area was clearly marked with lights and there were no obstacles for a 1/2 mile or more.

Takeoff was 10 minutes earlier than scheduled and the flight to the drop zone went routinely, with the student jumpmaster and the other jumper suiting up enroute. Upon arrival at the DZ, they entered the jump pattern, established communication with the ground party, and set up for the first jump. The first student was good; he deployed two winddrift spotter chutes, "launched" the other jumper and then himself without a problem or a delay. Rock glanced at his watch. Only 25 minutes. That went well, he thought. They still had 1 hour and 35 minutes to land, pick up the other jumpers and make another jump. At least that was what he thought. Out of the blue the pilot called back and said, "You PJs have 1 hour left. That includes the flight back to the base." This upset Rock, but to avoid wasting time he "rogered" it and prepared for the landing. The ground party was informed of the time limitations, and when the aircraft landed, the other jumpers scrambled on board as quickly as possible and prepared for takeoff.

There was something wrong but he couldn't put his finger on it.

The aircraft took off almost immediately. Rock figured that with the time it would take to fly back to the base, they had 20 minutes to make the jump. That would be pushing it, but at least the student would get some training. The time factor made Sergeant Barron, the student, anxious and very nervous. This was totally out of character for Barron. He was normally very calm and collected, even in the most stressful situations. The lights on the target were also becoming very difficult to see, adding to Sergeant Barron's problems. Rock had been sitting in the open door for over an hour. He was beginning to get very chilled, since the temperature was about 10°F and the aircraft was flying at 70 knots. Sergeant Rock was uneasy about something. His stomach was in knots; there was something wrong but he couldn't put his finger on it. He could feel the pressure of the time limitation, but there was something else upsetting him.

Rock had been in this situation many times before. Time always seemed to be against a PJ jump. So why was he so edgy? Thinking it was the time factor that was making him edgy, Rock made a decision. He told Sergeant Barron to slow down. They could always get this jump off some other night. About that time Captain Logan informed them they could have another 30 minutes if they needed it. That helped. Rock felt a little more at ease, but not totally relieved. Sergeant Barron said, "Don't worry Sarge. I'll get

this over in 20 minutes, no sweat." His confidence was coming back.

Rock checked his reserve chute to make sure it was near when it came his turn to jump. It was next to his right knee, secured to a tiedown ring. He noticed Sergeant Barron's reserve chute tied down on the front passenger seats. Barron was a good student; he had had the foresight to insure the reserve didn't accidentally fall out of the aircraft. Sergeant Barron had completed all checklists and briefings before the

How could "the Rock" have let this happen?

actual pattern was established and seemed to be doing quite well. He was now kneeling in the door, looking for the target. He finally saw the target and dropped the spotter chute. Good job, Rock thought, I'll be out of this wind in 10 minutes. Sergeant Barron was leaning outside the aircraft, trying to locate the flashing strobe light attached to the spotter chute. The cold air was murder, and the sting caused tears to flow down his cheeks. Rock, anxious to get this over with, also started to look for the strobe light. The pilot called back, "I've got it at 2 o'clock low." The two PJs also sighted it. Sergeant Barron raised up on one knee and leaned far outside the aircraft in order to get a better lineup. Rock was watching Sergeant Barron's position in relation to the target. Suddenly, out of the corner of his eye Rock noticed the flight engineer waving frantically. He was pointing to Sergeant Barron's parachute; there, still attached to the back of his chute, was Barron's static line. It wasn't hooked to the aircraft as the checklist required. Sergeant Barron was not secured to the aircraft. If the aircraft turned sharply and he fell out, there would be nothing to restrain him and no way for his chute to open.

Rock slowly put his hand in front of Sergeant Barron, pushing him back inside the aircraft while sliding the door closed with the other hand. Sergeant Barron had missed a checklist item, and Sergeant Rock had not noticed. When Barron realized what had happened, he turned sickly pale, almost as pale as Rock. How could "the Rock" have let this happen? He had always been noted for his thoroughness and had often been accused of being fanatical about safety, especially on jumps. But here he was, responsible for a situation that could have easily cost this young jumper his life.

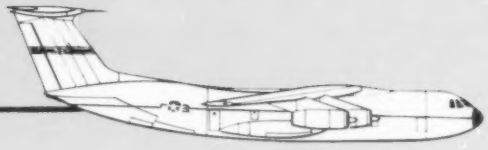
The Rock had let himself become rushed. He had relied on past experiences instead of following the checklist. He had wanted something so badly, he had pushed safety to the bottom of his priority list. He had often read about aircraft and ground accidents that had been caused by supervisory negligence. These accidents had seemed so stupid, since the people involved usually had years of experience. He always said to himself, Something like that could never happen to me. I'm just too safety conscious. But now Sergeant Rock was in the same type predicament. He had allowed a dangerous situation to develop just because he wanted to prove a point. Luck was probably the only thing that had saved Sergeant Barron's life that night, not Rock's experience.

Following the incident Sergeant Rock returned to his meticulous, methodical way of jumping and instructing. Now, if time becomes a factor, Rock cancels the jump. No student flies with "the Rock" without a thorough understanding of the importance of the checklist. He finds himself checking and rechecking static line hookups. Anytime Rock hears fellow PJs or any crewmember say that an accident couldn't happen to them, he tells them the story of the time "the Rock" slipped.

ABOUT THE AUTHOR

SMSgt Larry L. Austin entered the Air Force in September 1963 and graduated from pararescue training in May 1965. He holds a B.S. in business administration from the University of Albuquerque and a M.A. in human relations from Webster College. He has served in pararescue units across the world and has performed instructor and flight examiner duties. He currently serves as Chief of the Instructions Division, USAF Pararescue School, Kirtland AFB, New Mexico. SMSgt Austin has over 3,000 flying hours and 260 jumps to his credit.

Flight Lines



Footnote Foible

The footnote to the article, "Even the Little Ones," in the April 1981 issue contains a misleading statement. The footnote stated that "Radar cannot show wind velocities or turbulence." This statement is true for non-doppler radars. Doppler radars, on the other hand, do detect signals indicative of these phenomena.

Major Michael G. Olivier
Chief, Scientific Services Branch
2d Weather Wing

***Right you are, Major, but since the article was about "aircraft weather radar" and because we know of no MAC aircraft that has a doppler airborne radar, we felt the footnote was correct for the purposes of the article. We are, however, interested in the development of the kinds of radar systems to which you refer, especially those using a microwave pulse. If in the next ten years, an airborne doppler radar progresses past the experimental stage, we will be very interested in publishing more about it. And since you are obviously well attuned to its development, we know just who to ask for the story.**

Our Kind of Folks

Base Operations of the 440th CSG (AFRES) at General Mitchell Field, Milwaukee, Wisconsin deserves some recognition for a job well done.

All of us who have a hand in the support of transient aircrews are proud of the reputation we've earned as a great cross-country base. We are a reserve C-130A unit which is not authorized a full-time base operations. We have no Notam board or weather briefer and, except for training weekends, base ops functions are accomplished as an additional duty by civilian and ART personnel of the 95th Tactical Airlift Squadron.

We have a small ramp but our efficient maintenance crew will make room whenever possible. We're not authorized any transient maintenance personnel but we have years of experience and the willingness to help if we can.

If aircrews are not familiar with the Milwaukee area, we're always willing to help find accommodations and recreation.

Small bases like ours never seem to make the Rex Riley Reviews and it's a darn shame. We just want all you active duty types out there to know that we'll match our "can-do" attitude and our past record with any other base.

Capt Lynn M. Randel
Asst Base Operations Officer
440 CSG, Milwaukee, Wisconsin

***All we can say is, "Rex Riley, eat your heart out!"**

May the "Total Force" Be With Us All

After reading the article on "Safety Successes" in the April (81) issue of *The MAC Flyer*, I feel that some comment relative to the "Total Force" is appropriate.

The 375 AAW, 60 MAW, 62 MAW, 63 MAW, 436 MAW, 437 MAW, and 438 MAW have Reserve Associate units which are collocated and integrated (with the active wings). Unit accomplishments, awards, and inspection ratings cannot be attained (in these wings) without the contribution of Reserve Associate maintenance personnel and aircrews. Any recognition of the host should include the Reserve Associate organization. This will insure full support of the Total Force policy established by DOD and fully supported by MAC.

Leroy A. Kinzel, Chief
HQ MAC Logistics Reserve Affairs

***We couldn't agree more. And for those wings winning a MAC Flight Safety Achievement Award or the MAC Distinguished Flying Unit Award, a separate, duplicate award is presented to the Associate Wing in recognition of their vital contribution to safe mission accomplishment.**

Mishap with a Moral

Crashed!

This month's mishaps concern helicopters in widely varying circumstances. The first occurred on a "routine training mission." The second involved a chopper operating out of austere field conditions during a winter exercise. Both were caused, however, by a combination of "human factors" with some "help" from supervisory personnel.—Ed.

A Text Book Flight

The student helicopter pilot brought the Huey off the ground and quickly climbed toward cruising altitude. It was early morning and the student was scheduled to practice some heavyweight autorotations under the watchful eye of a fairly experienced IP. Everything had gone smoothly up to their arrival at the training site. The IP demonstrated one straight-ahead autorotation for the student. Both pilots noticed the rotor rpm rising slightly above the green arc for the Huey, but both knew this was normal for a heavyweight autorotation. After a power recovery, the student assumed control, made a normal takeoff, came back around and accomplished a straight-ahead autorotation. After a successful power recovery he flew another pattern, this time making a 90° autorotation. Again, everything was going exactly as planned. In fact things were going so well that the student entered a downwind at 80 knots in preparation for a 180° autorotation. The student began the autorotation and completed the final turn at 150 feet AGL. As he initiated the flare at approximately 75 feet AGL, both pilots noticed an NF (engine power turbine) reading 5,000 rpm instead of the normal 5,600 to 6,000 rpm. However, the student continued to flare with *no action from the IP.* Airspeed and rate of descent continued to decrease which, along with the already low NF rpm, combined to create a potentially hazardous situation. The IP directed a go-around and the student lowered the nose, rolled the throttle full open and decreased collective pitch to minimum.

Continuing its descent, the hurtling Huey started to drift from a position aligned with the slide area at about 25 feet AGL. Realizing the engine was not going to accelerate, the IP got on the aircraft controls with the

student, rolled the throttle to flight idle and initiated a touchdown autorotation. His initial collective pitch input to cushion the landing was applied at 8 feet; full up collective was applied at or near touchdown. The right skid touched down 3 feet sooner than the left one and the tail skid touched down 21 feet from the first impression made by the right skid. A rapid 90° right turn followed almost immediately by another 90° turn put the humbled Huey to rest on its right side and pointing 180° from the original touchdown heading. Somewhere along the way, the main rotor also impacted the ground. Fortunately, no one was seriously injured, but the helicopter suffered over $85,000 damage.

A good portion of the moral to this mishap involves supervision—or the lack of it--on the part of the IP. He was supervising—keeping a watchful eye on—an inexperienced student. He failed to realize the significance of the low NF setting. On this particular aircraft, a 5,000 rpm NF indication means the engine was in the nongoverning range of the fuel control. Put another way, with the low NF rpm in combination with their particular flight situation, there was almost no chance they were going to successfully recover that autorotation unless the IP had taken definite action at the first sign of low NF rpm. The IP did recognize the student's excessively reduced speed and descent rate, but failed to take appropriate action until it was too late.

Vertical Vagary

Consider the following situation: A 35 year old Army aviator (1,700 rotary wing hours with 1,100 in type) and his copilot (800 total and 150 in type) have been living in tents in a tactical environment for 2 weeks. The weather is cold and the exercise is finally about to end. The pilot has not eaten properly prior to the flight. He is under mental stress concerning a personal problem. He is also undergoing psychotherapy for this problem.

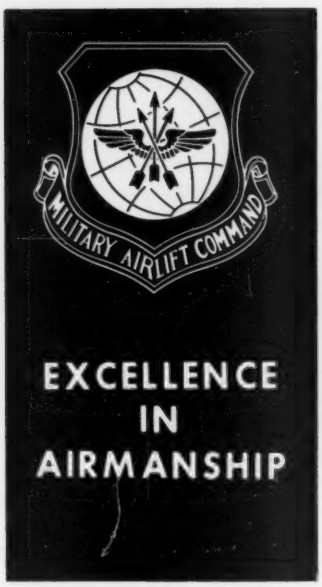
Now, having flown 5 continuous hours in a combination of nap-of-the-earth and low-level flight, the crew enters hovering flight at about 45 feet AGL to refer to a map and make some observations. While hovering, and without the crew's knowledge, their attack-type helicopter starts to drift rearward. Both crewmen divert their attention away from the hover at the same time without the other's knowledge. Suddenly, a loud "bang" shakes the two pilots back to reality. Their trusty mount has backed into a small tree—but large enough to wreak havoc on their machine.

A loud "bang" shook the two pilots back to reality.

While determining whether or not to land, the pilot feels the nose yaw suddenly to the right. Finding the antitorque pedals ineffective, he retards the throttle to flight idle and partially reduces the collective. As the aircraft settles, the pilot applies full collective. The aircraft rotates over 300° as it descends, the main rotor also strikes the small tree and the tail boom strikes yet another sapling. The tree-chopping chopper comes to rest almost directly underneath where it was hovering only seconds before. Toward the end of a demanding day during a strength-sapping winter exercise, this crew had relaxed their standard tactical procedures. Both had diverted their attention momentarily away from their primary duty—flying the aircraft. Six continuous hours in the air had caused both to become fatigued. The pilot's improper eating habits had resulted in low blood sugar and consequently, a low energy level when he needed maximum strength and alertness. In addition, the pilot was suffering mental stress from his personal problems. Coupled with all other factors, this crew became an accident waiting to happen. Fortunately, there was no loss of life. There's a little more to it than a straightforward case of fatigue/stress-induced error, however, and Army investigators considered some additional factors.

Although aware of the pilot's problems, the unit commander was unaware of the *overall* effect of those problems on the young aviator's flying performance. He didn't refer the chopper pilot to a flight surgeon or remove him from flying status. A further contributory factor may have been the lack of a flight surgeon. This particular outfit had been without the services of a full-time flight surgeon for about 3 months. Consequently, failure to monitor this unit's medical condition may have contributed to the mishap pilot's continued flying status.

Again, supervisory factors and human limitations thwarted safe mission accomplishment.



Standing Left to Right: Sgt Mark H. Crooker, FE; Captain Stephen B. Frye, CP; Captain John D. Hauck, Jr., AC; 1Lt Gregory D. Breland, CP. Kneeling Left to Right: Sgt Kenneth D. Millahn, FE; SSgt Gene N. Powell, FE; MSgt William T. Nicholson, LM; SSgt John W. Gordon, LM.

Captain John D. Hauck Jr. and his 30th MAS crew had just lifted off from Lajes Air Base in their C-141B when they were notified of a possible landing gear malfunction. The radio call came from an alert, fellow C-141 pilot who was casually observing their departure from the ramp. This was confirmed almost immediately by tower personnel who observed the left main gear dangling 10 feet below the aircraft, held only by the forward scissors arm. The inner strut had completely separated from the outer strut housing. After sorting out the various options available with experts on the ground through a "Conference Skyhook," Captain Hauck decided to remain at Lajes because of the adequacy of their crash/rescue equipment.

After all 10 pallets of cargo were jettisoned (which had never been attempted before in conjunction with an emergency), the 438th crew burned the fuel down to 15,000 pounds. This lowered their gross weight even more so that a slower final approach and touchdown speed could be flown. Captain Hauck went over the impending crash landing with the crew. He insured that each crewmember knew exactly what had to be done to give the crew and the 24 passengers the best chance of survival and to minimize damage to the aircraft. The approach and subsequent landing were flawless with Captain Hauck and his crew demonstrating the highest degree of skill and professionalism. Their excellence in airmanship saved the lives of 8 crewmembers and 24 passengers and a valuable aircraft.

For a more detailed account of this truly dramatic incident, see "Six Short Rings at Lajes" in the October 81 issue of TMF.

Captain Smith and Crew. Captain Smith and his

Left to Right: Sgt Robert E. Haw, FE; TSgt Tonny Sims, LM; AIC Jeffrey L. Rawdon, LM; Capt Philip T. Smith, AC; 1Lt David G. Thomas, CP; Maj Robert J. Rayburn, N.

36th TAS C-130 crew were cruising at 16,000 feet when number 3 engine suddenly started leaking fluid from its drain mast. The crew quickly accomplished an engine shutdown and declared an emergency. But just as the engine stopped, flames burst from the turbine assembly reaching about 10 feet aft of the tailpipe. Captain Smith put the Hercules into a power dive in an attempt to

"blow" out the fire. At 12,000 feet, the fire appeared to go out, but suddenly reignited as the airspeed dropped below 200 knots. Since 190 knots was the maximum speed attainable on three engines in level flight, Captain Smith continued diving the C-130 to control the flames which threatened to engulf the aircraft. Hill AFB was less than 60 miles away, but with the mountainous terrain, it was a question of whether the crew could keep the flames at bay by descending and still have enough altitude to make an emergency landing at Hill before the fire spread. A total of five separate power dives were executed. During this time, the loadmasters, TSgt Sims and A1C Rawdon, kept the passengers calm, rebriefed emergency ground evacuation procedures, and made ready for the emergency landing. Smoke still trailed from the now-feathered number 3 engine as Captain Smith, aided by 1st Lt Thomas, the copilot, maneuvered the aircraft clear of populated areas and onto a final approach. The landing was accomplished over a 3,000 foot closed portion of the runway to keep from landing into construction equipment and the crowded parking ramp. After clearing the runway at a high speed turn off and coming to a stop, the crew assisted all the passengers in safely evacuating the still-smoldering Hercules. The excellence in airmanship exhibited by Captain Smith and crew clearly prevented loss of lives and the destruction of the aircraft.

Left to Right: TSgt Peter Swanson, LM; Capt Sam Oglesby, AC; Maj Michael Gjede, N; TSgt Ted Swanson, LM.
Not pictured: Maj Mike Coffey, CP; Capt Will Atwood, CP; Maj Bob Andrews, N; Maj Charles Loan, N; TSgt Carlo Bartoli, FE; and TSgt William Martini, FE.

Captain Oglesby and Crew. The 514th MAW (Assoc) crew was on a C-141 night-formation, low-level training mission that was to terminate in a paradrop of simulated heavy equipment. Captain Oglesby, the IP, was instructing Major Coffey in preparation for an upcoming checkride. Major Gjede, instructor navigator, was going over low-level navigation procedures with Major Andrews. The low-level portion of the mission went according to schedule with Captain Oglesby and crew in the number 2 position of the formation. Approaching the drop zone with all doors and the ramp positioned, they slowed to approximately 150 knots. Just after the 1-minute warning, however, TSgt Theodore Swanson, loadmaster, heard a loud grinding and banging noise toward the rear of the aircraft. He advised the rest of the crew that something was seriously wrong with the ramp and petal doors. The aircraft was within seconds of being over the drop zone but Captain Oglesby immediately commanded a "no drop." Further investigation revealed that the left petal door had buckled laterally just forward of the rear hinge, allowing half the door to close while the other half was left hanging down into the slipstream. This caused a great deal of asymmetrical drag. Leaving the formation and heading back to base, the pilots had to use full left rudder and about 50 percent aileron to maintain wings-level flight. In this critical control situation all turns were made using no more than 10° of bank. After assessing the damage the crew found the problem centered in the area of the buckled left petal door which included broken hinges and a broken jackscrew. Several hydraulic lines in the area of the door were exposed, causing them to buffet wildly in the slipstream. With door separation a very likely possibility, the crew maneuvered the Starlifter over non-populated areas to start their approach. The loadmasters used manual override to bring the ramp to the locked position for the landing. After performing a controllability check, Captain Oglesby made an approach-flap approach to a successful landing, terminating a very tense training mission. The superior crew coordination and excellence in airmanship demonstrated by Captain Oglesby and his crew minimized damage to the aircraft and overcame a potentially disastrous situation.

Mission: Reforger 81

by Captain Gale E. Clouse, Jr.
Associate Editor

Twenty seconds. Ten seconds, 5, 4, 3, 2, 1, hack; 1400 Zulu," the young C-141B navigator called out as the six crews simultaneously set their watches.

"Good morning everyone. I'm Captain Hanlon, 20th MAS, Charleston, and I'll be briefing today's mission. Mission classification is unclassified. Our mission objective is deployment of Reforger forces to Germany and training for MAC aircrews." As I sat listening to the young lead pilot give his briefing, I silently thought to myself, it happens every autumn, doesn't it? But this Reforger mission, as I was to learn, was going to be a bit out of the ordinary.

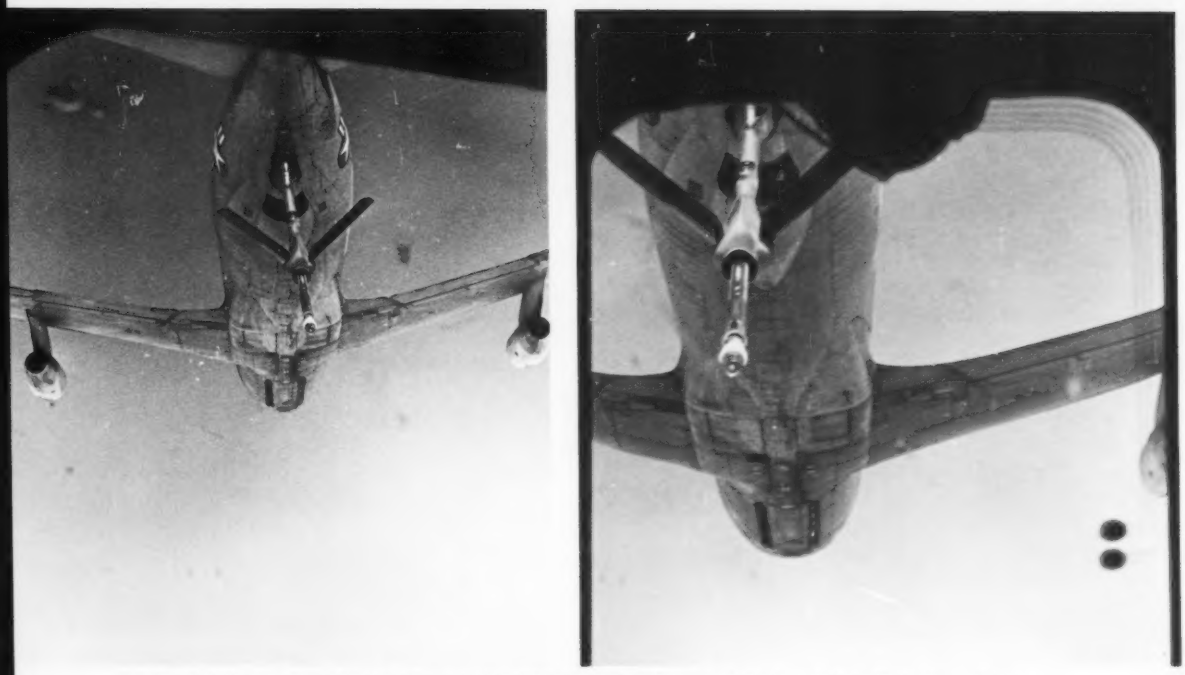
Three crews from Charleston and three from Norton had been chosen to fly a six-ship C-141B formation flight from Little Rock AFB to Rhein-Main Air Base, Germany to support the JCS exercise Reforger 81. But the training objective for our mission was to continue development of strategic formation and refueling procedures for MAC C-141 aircrews. To make the flight non-stop, a rendezvous was planned with three SAC tankers over northern Canada to top off each of the C-141B's. In addition to the aerial refueling (AR) and formation flight, upon arrival in the Frankfurt area, we planned to fly a low-level mission prior to landing. Flying this route would simulate procedures for airlanding troops and cargo in Europe under a wartime scenario. This mission would allow MAC airlift forces to demonstrate both to our allies and potential adversaries the capability to rapidly reinforce NATO's central region.

Prior to the mission briefing on 12 September, aircrews spent their time in crew rest, mission planning, briefing and loading. The mission commander for this

Captain Stephen J. Hanlon gives detailed mission briefing for six C-141B aircrews.

formation flight was Lieutenant Colonel Al Brown from the 20th MAS at Charleston. During the briefing he emphasized that flying safely was important for the success of the mission. He noted that keeping our eyes out of the cockpit was especially critical for the formation and AR portions of the flight.

Captain Randall Young of the 15th MAS, Norton was aircraft commander for "tail-



Our C-141B, "tail-end Charlie," approaches SAC KC-135 tanker, Chub 43, from below. Photos by author.

end Charlie," the last ship in the formation. As we reached our aircraft and began the standard MAC "bag-drag," our flight engineer, Technical Sergeant Lawrence Gast, told us that one of the Starlifters in our group had maintenance problems and would be delayed at Little Rock.

At 1615Z our five-ship formation taxied out to the active runway in preparation for our scheduled 1630Z departure. With the lead ship handling all communications with ground control and tower, the Starlifters lined up in staggered positions and stopped, waiting for lead to release brakes for takeoff.

The lead ship began the takeoff roll at exactly 1630Z. One by one, the other airlifters took off in 20 second intervals. Captain Young, last in the formation, pushed the throttles forward and maintained runway heading for 1 minute after brake release, then turned to join up with the others. ATC then cleared all five planes direct to Pocket City vortac in Indiana, and we were on our way.

Little Rock maintenance, working on the sixth plane, gave an ETIC of 2 hours. The last Starlifter crew decided to try to fly direct to Frankfurt without refueling. While maintenance rapidly completed its repairs on the C-141B, the crew filed its flight plan and updated the weather forecast for Germany.

Meanwhile, we climbed in clear skies to our assigned formation block altitude of FL310 to FL330. We were in a 2,000 foot block altitude so as to space out our formation. We were spread 4,000 feet apart and formed in two elements. The second element of two planes was stacked up 500 feet above the first element. Wingmen in both elements flew 500 feet crosstrack. Aerial refueling and formation flight, while new to me, were routine for the MAC crews on this mission. Several of the crews had flown a 12-ship C-141B aerial refueling during exercise Ocean Venture, in August 1981.

About 1 hour after takeoff from Little Rock our formation began to encounter significantly stronger winds than forecast on the computer flight plan. The lead ship commanded an increase in airspeed to make good our arrival time at the air refueling control point. As we approached our rendezvous area, lead then gave us heading changes over interplane frequency as well as SKE commands to execute turns.

Our major aerial manuever now occurred as we went from a five-ship formation into AR echelon. The new formation was

designed to get all five planes in trail behind the three-ship tanker group. AR echelon meant our formation flew to a 60 degree line to the right of the lead ship with separation of 1 nautical mile nose to nose between each C-141B. After visually sighting the KC-135 tanker formation from the 42d AREFG based at Loring AFB, Maine, the first three aircraft in our formation climbed into a position about 2 nautical miles behind and slightly below the tankers. We were able to skin-paint the tanker and make positive visual contact later. Intermittent clouds caused borderline VMC conditions along our refueling track. When it came our turn, we pulled up to our tanker and hooked up.

During our first contact, however, we didn't take on any fuel because of mechanical problems. We broke contact, backed off, and then hooked up again. This time everything worked as planned and the fuel transfer was completed in 14 minutes. Since the sixth plane didn't make the formation flight, we asked for and got an additional 10,000 pounds of JP-4 above the planned 40,000 pound onload. The other four planes in the formation also received between 40,000 to 50,000 pounds of fuel from the tankers. By the end of our formation refueling we began to experience intermittent "actual IMC" conditions. The weather slowed our formation rejoin but we were again on our way coasting out over Hopedale NDB in northern Canada. Our Atlantic crossing was uneventful. Here the lead ship handled oceanic communications with military HF facilities.

After "coasting in" over Scotland, we continued past RAF Mildenhall where our flight got a pleasant surprise. A very English voice cleared us INS direct Frankfurt VOR. Approval of English, French, Belgian, and German air traffic control for a direct routing for our formation flight was appreciated by each Starlifter crew.

Fifteen miles northwest of Rudesheim, Germany at 0246Z, Frankfurt Approach Control broke the five-ship formation into single ship routing with 1,000 foot separation and 3 minute separation for each plane. On our low-level route near Frankfurt, turn points included the usual assortment

Little Rock maintenance had done a super job.

of highway intersections and power lines as well as hilltops and railroad underpasses. It was after midnight in Germany during the low-level route and several of our checkpoints were difficult to find, even in the untypically clear, crisp sky. We managed to be very nearly on time and on target when we reached the initial point and the drop zone. Following clearance from the route to Nierstein, Germany we flew an ILS to Runway 25L at Frankfurt. Captain Young performed a left seat "grease job" landing at 0408Z.

In all we had logged a long, demanding but very satisfying 11.7 flying hours. The C-141B which had been delayed at Little Rock for maintenance landed about 1 hour later, but well within the user's required delivery time. Little Rock maintenance had done a super job in quick-turning the broken Starlifter.

The Reforger mission was successful, especially in view of the fact that it occurred during the height of the FAA controllers' strike in the United States. Crews had been very conscious of safety during the crew briefing, in the formation flight and on the low-level route. The biggest factor affecting safety during the mission was *fatigue!* The crew I was flying with was a basic crew and they were very tired after 10.7 hours of formation and aerial refueling, plus the 1 hour of night low-level flying. The mass formation flight did give our strategic airlift aircrews some realistic training—that's for sure. The formation and mass AR helped to refine our tactics and improved our standardization for mass C-141B aerial refuelings. Safety had indeed been enhanced during this mission by the professional performance of the aircrews.

Our cargo for the formation, 90 soldiers from an Arkansas Army National Guard "rear area" unit along with 78,000 pounds of cargo including rolling stock were quickly off-loaded at Rhein-Main. The Guard troops spent the next several weeks participating in NATO army war games in their unique "rear area" role.

As for "my" crew, it was definitely time for some well-deserved crew rest, because the next day Captain Young and crew were scheduled to fly a mission in support of exercise Amber Express in Denmark.

MAC INDIVIDUAL FLYING-HOUR MILESTONE AWARDS

10,000

Lt Col Norman Kristic, 3 MAS
Lt Col Daniel W. Pruitt, 3 MAS
Lt Col Robert D. White Jr, 301 MAS
Maj Albert J. Boettger, 773 TAS
Maj Arthur W. Gillson, 301 MAS
SMSgt Walter E. Neidig Jr, 3 MAS
SMSgt John H. Stanton III, 180 TAS
MSgt Edward M. Files, 167 TAS
MSgt Joseph Gardner, 911 TAG
MSgt Rosario Lucido, 335 MAS
MSgt William C. Ohlig, 3 MAS
MSgt Thomas L. Wood, 164 TAG

5,000

Lt Col Bruce J. Bellg, 16 TATS
Lt Col Ralph N. Campbell, 16 TATS
Lt Col Edward H. Darcey, 34 TTS
Lt Col Bruce L. Fister, 50 TAS
Lt Col Clifford P. Frey, 34 TATG
Lt Col Norman G. Gross, 16 TATS
Lt Col Ronald G. Harris, 16 TATS
Lt Col Tyler B. Huneycutt III, 16 TATS
Lt Col Robert R. Miner, 34 TTS
Lt Col Larry D. Springs, 16 TATS
Lt Col Stanley F. Tencza, 16 TATS
Maj Dean B. Beechy, 911 TAG
Maj Donald O. Bradley, 3 MAS
Maj Carl D. Brown, 34 TTS
Maj Stanley L. Brown, 64 TAS
Maj Winford E. Butler, 16 TATS
Maj Richard A. Chartrain, 335 MAS
Maj Paul J. Engstenberg, 3 MAS
Maj Bernard A. Frakes, 16 TATS
Maj George R. Giganti, 55 ARRS
Maj Robert E. Gaughan, 911 TAG
Maj John H. Harling, 3 MAS
Maj Robert M. Kern, 16 TATS
Maj Jerome S. Mushinski, 16 TATS
Maj Andrew Orlowsky Jr, 3 MAS
Maj Richard L. Picard, 16 TATS
Maj David H. Spindle, 64 TAS
Maj Lawrence W. Townsend, 34 TTS
Maj Elmer S. Whittier Jr, 337 TAS
Capt Jeffrey J. Linder, 301 MAS
Capt Raymond E. A. Longo, 3 MAS
Capt Perry N. Whitfield, 3 MAS
MSgt Anthony G. Jones, 16 TATS
SMSgt John W. Petty, 41 MAS
SMSgt Robert J. Queeney, 50 TAS
MSgt Stanley R. Alsing, 301 MAS
MSgt Gary M. Berger, 16 TATS
MSgt Richard A. Bissonnette, 3 MAS
MSgt George S. Crews, 16 TATS
MSgt Jessie J. Fisher, 3 MAS
MSgt Robert D. Frey, 50 TAS
MSgt Robert W. Hudson, 16 TATS
MSgt Michael R. Lyon, 16 TATS
TSgt Clyde E. Burnette, 16 TATS
TSgt Luther B. Farmer, 50 TAS
TSgt Edward F. Galucki, 16 TATS
TSgt Howard R. Hall, 16 TATS
TSgt Theodore W. Heazlit, 16 TATS
TSgt Shelley L. Kelley, 62 TAS
TSgt John T. Miller, 3 MAS
TSgt John M. Missale, 905 MAPF
TSgt Walter E. Wood, 16 TATS

2,500

Maj Walter A. Greiner, 41 ARRS

(ranks and units are those at time of award).

Kawasaki C-1

Conceived as a replacement for its aging fleet of Curtiss C-46's, design work for the Kawasaki XC-1 started in 1966. The first flight of a prototype of the new twin-engine, medium-range jet transport took place in the autumn of 1970. Following a year of flight tests, the two flying prototypes were turned over to the Japanese Air Self Defense Forces (JASDF). By 1978, approximately 30 C-1A's had been delivered and were in service.

Looing like a "mini" C-141, the C-1A is powered by two JT8D-9 turbofan engines built under license by Mitsubishi, each capable of producing 14,500 pounds of thrust. The C-1A has a maximum takeoff weight of almost 100,000 p of over 350 knots, and a top speed maximum fuel load of slightly ove payload, the range of the C-1A is i or 3,350 kilometers.

Sporting some impressive load fully-equipped troops, 45 paratroo capable of dropping heavy equipm and door. The floor, stressed for l square inch, can be loaded with a trucks, or 2 jeeps or 3 pre-lo standard crew of five (pilot, copil loadmaster), the C-1A is capable or taking off in just 2,100 feet. The this allied airlifter.

Allied Airlifters

000 pounds, a maximum cruise speed
peed of around 435 knots. With a
over 4,000 gallons and a 4,850 pound
A is in excess of 1,800 nautical miles,

oad capabilities, the C-1A can carry 60
troops or 36 stretchers. It's also
uipment loads from its aft cargo ramp
for loads of up to 100 pounds per
th a 2½ ton truck, or two 1,500 pound
e-loaded pallets. Operating with a
opilot, navigator, flight engineer and
ble of landing in as little as 1,500 feet
. The JASDF is the only operator of

The Snitch

A flight engineer resolves to "blow the whistle" in this fictional tale.

by Major James P. Coe
616 MAG
Elmendorf AFB, Alaska

Staff Sergeant Wesley Sheffield settled onto the couch in the crew lounge and exhaled heavily over a steaming cup of coffee.

"Hey Wes, howzit going?" asked a flight-suit clad figure approaching the coffee pot.

"Not bad, Chief," the young sergeant respectfully replied.

Chief Master Sergeant Carroll spread a wide grin across his face and sat down in an overstuffed chair opposite Sheffield. "I see they gave you a challenging mission for your first 'solo' flight."

"Shouldn't be too hard. Just a local copilot checkout. I figure I can get through it. No sweat!"

"No doubt about it," assured the master flight engineer. "Just don't let the pilots accidently land with the wheels up or run it

into another plane in the traffic pattern and it'll be a snap. Who ya flying with?"

Wes furrowed his brow for a second until the unfamiliar AC's name came to him, "Captain King, I think."

"Cap'n 'Sky' King!" the Chief chuckled as he stood up. "Your first local will probably be an enlightening experience," he added as he turned for the door. "Good luck."

It's inevitable, I suppose, that anybody over 30 and associated with flying who has the last name "King" would pick up that tag, speculated Wesley, as he walked down the hall to join the crew for the briefing.

Captain King's briefing was straightforward and the mission appeared to be rather routine. As the AC put it, "This isn't a checkride, even though I'm an examiner. We just want to make sure that the school did their job right before we send you out on line missions, lieutenant. We'll look the local flying area over, shoot a few approaches, practice some emergencies, and I'll show you a few things about the Hercules that the folks at Little Rock might have missed." That all sounded fine to Sergeant Sheffield, and in a few minutes the crew bus was dropping him off at the C-130 to start his preflight.

"We're all ready to go 'cept for buttoning up the right-wing life raft compartment," announced the crew chief as Wes ascended the cockpit ladder. "You're new, aren't ya?"

"Yeah, name's Wes Sheffield," he replied and extended his right hand.

"Susan Sturm," the maintenance technician replied shaking his hand. "And *I am* the *regular crew chief*, so take good care of *my* airplane." They both laughed.

The new flight engineer preflighted the Hercules inside and out, and he and Sergeant Sturm were just starting the power-on checks as the sun peeked over the frosty horizon. A short time later, Captain King and Lieutenant Newton arrived at the aircraft. With work on the life raft compartment completed, the C-130 was ready to go with only a few "red diagonal" delayed discrepancies. By the time the orange orb of the winter sun was fully above the tree line along the field boundary, Sergeant Sheffield was doing the fuel system checks while the Hercules taxied to the runway for takeoff.

This guy is going to kill us.

Engine runup was good, and the brown-bar copilot kept up with the checklists and radios surprisingly well. Captain King turned the aircraft over to the right-seater once it was lined up on the runway, and he made a smooth takeoff into the rising sun.

After one normal touch-and-go landing, King decided to put the fledgling Hercules pilot to the test. When the C-130 was leveled on downwind he announced, "Simulate a flashing red light in the number one T-handle." Lieutenant Newton had learned his lessons well at "the Rock" and gave the correct responses for the supposed turbine overheat. He ordered the proper "simulated" checklists which were dutifully "simulated" complete. The three-engine approach and landing were well done. Two more practice engine-out approaches, a partial-flap approach, and a three-engine missed approach from an ILS followed. Captain King then took control of the C-130 and instructed, "Get our clearance to City Muni."

Lieutenant Newton worked the radios and in a couple of minutes, the mission was climbing to 8,000 feet on its way to a neighboring airport. Leaving the terminal area, departure control handed Gift 35 off to the center. As soon as Newton checked in with the new controller, the left-seater keyed the mike, "Center, Gift 35 canceling IFR; descending VFR to 4,500 feet."

"Roger, 35, radar service terminated, squawk VFR. Good day," replied the controller.

Captain King pulled the throttles back and rolled the brown-and-green transport into a steeply-banked-descending turn. He skillfully rolled it out precisely, headed north with the airspeed building and said, "My wife's cousin owns his own airplane and runs a small airport about 5 miles from here. We're going to go take a look."

Newton gave the Captain a nervous grin. Sheffield was beginning to suspect what the Chief might have meant by an "enlightening experience."

King's first pass was parallel to the 2,000-foot-long grass strip at about 300 feet AGL and 250 knots. Reaching the north end, he pulled the C-130 into a steep climb attitude, racked it into a right wingover and came around for another pass. By now the younger pilot was turning white and ventured a question, "Aren't you afraid somebody will report us . . . or we'll get violated, or something?"

"No way," boasted the AC. "Folks around here expect me to come by every few weeks. They even come out to see the show," he added as he pointed to a man exiting the back door of one of the large houses along an east-west county road near the north end of the airfield. King rocked the Herk's wings as he descended to 100 feet over the grass runway and the speed passed 275 KIAS. As the power lines at the south end of the field loomed closer, Sergeant Sheffield gasped. The pilot jerked the 130 into a 45° climb and Wesley's vision tunneled slightly because of the unexpected G-load.

Cartwheeling across the ground, the transport disintegrated.

"I can't believe this is happening," the young engineer wondered aloud, but his remark was drowned out by the roar of the turboprops. As the aircraft started another diving turn, the Captain pulled the throttles to flight idle. "NTS on three and four," warned the young engineer as the Hercules waddled to the east. "Don't you think we should head for home?" Sheffield added.

"Not yet," was the AC's curt reply as he eased the throttles forward a little. "This is the last of the really good flying!"

Wesley wondered, good for who? This has got to be unsafe, and I'm going to talk to Chief Carroll when we get back. No, that wouldn't do any good, he must already know and hasn't done anything about it. So I'll tell the ops officer, he wouldn't want one of his pilots doing this. But then King would know who snitched on him and he could make life miserable for me. I've probably got 3 years to go in this squadron. Maybe the wing IG or a safety officer? Suddenly Sheffield's thoughts were interrupted by the downward press of G-loading as the left-seater maneuvered the Herk through another whifferdill.

Having finished a low pass along the road to the west, the Hercules was now turning and descending for a run to the east. A considerable crowd of spectators had gathered in the backyards of the houses. Despite dishes being rattled in the cabinets, everyone seemed to be enjoying the impromptu air show. Mrs. King's cousin was busy snapping pictures with his new 35 mm camera.

I don't care what might happen to me, Wesley resolved, I'm going straight to the commander when we get back. This guy is going to bend the airplane or kill us if he keeps this up. *I'd rather squeal on a fellow flyer than be dead.*

As Captain King started a turning pullup for another pass to the west along the road, the C-130 unexpectedly shook violently and the pitch increased rapidly. Reacting immediately, the AC pushed forward on the yoke; it wouldn't move. Quickly the laws of physics overcame the flyer's efforts to control the aircraft and it entered a high-speed stall. The left wing struck the bare maple trees at about 60° of bank and the number 1 prop chewed into the tree branches a split second later. Cartwheeling across the ground, the transport disintegrated, with parts of the plane landing near the spectators that moments before were enjoying the show.

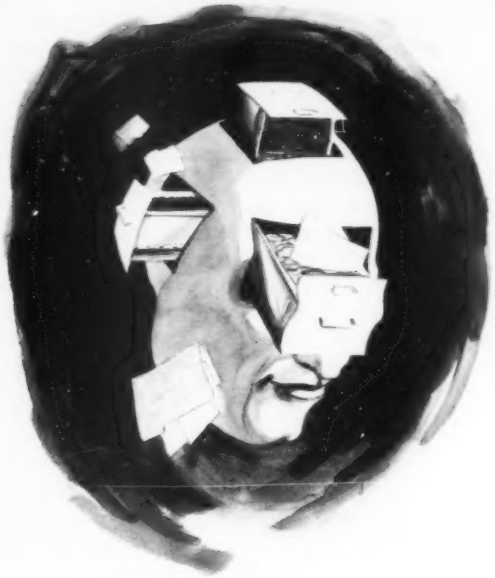
The safety investigation board had little trouble figuring out why the Hercules crashed. Orange pieces of a 20-man life raft were found tangled in the mangled horizontal stabilizer and elevator. The right wing life raft compartment door was found about a 1/2 mile east of the crash site. Photos provided somewhat reluctantly by the captain's widow clearly showed what the plane was doing just before the crash. But exactly why the unauthorized air show was going on that day remained a mystery. Chief Carrol and the other people in the squadron who might have known what King had been up to never came forward for one reason or another. And Wesley Sheffield was never able to act on his resolve to be the one to snitch.

ABOUT THE AUTHOR

Major James P. Coe was an Associate Editor of *The MAC Flyer* from October 1977-September 1981. He was recently reassigned to the 616 MAG, Elmendorf AFB, Alaska as a C-130 pilot.—Ed

A reservist shares his views on:

Need to Know/Nice to Know



by Lt Col C.B. "Chad" Casson
97 MAS (Associate)
McChord AFB, Washington

This article is required reading only for those that don't know it all. Those who do know it all may proceed directly to "C.R. Terror."

As our fingers do the walking through the voluminous Dash One's, 55-xxx's, FCB's, etc., we, as MAC crewmembers, must constantly choose those items that must be committed to memory. Conversely, we must put in proper perspective those non-critical, "nice to know," but just as easily looked-up items. All professional aviators struggle with this controversial question throughout their career. The solo T-37 student has to reach very quickly into his or her memory bank for the forced landing steps. Both flight checks and the possibility of a real crisis demand it. I can still remember the verbal crutch from over 20 years ago: *G*od *G*ave *H*ope *T*o *T*hose *S*peedy *S*ports *W*ith *B*ad *C*omposure (*G*ear Down, *G*as Off, *H*arness Locked, et cetera). On the other hand a B-52 aircraft commander, with eight engines, sitting atop 300,000 pounds of fuel and a couple of nukes couldn't care less about memorizing a forced landing procedure. Why? Selective logic, it's that simple. When we transition to a new aircraft we must initially trust those who are teaching us to guide and direct that selective logic.

Any good instructor's reasoning as to what's *need* and what's *nice* should be substantiated by the historical data of accidents and incidents plus his own knowledge and experience. Every aircraft has its "need to know's" and "nice to know's."

The C-141 is no exception, and in many ways is a perfect example. The Starlifter's a fine workhorse of a bird that has an illustrious history of good service over many years. Statistically, however, the mishaps that have occurred dictate a healthy respect for certain weaknesses—some mechanical or technological due to system deficiencies and others due to human factors. Our beloved Starlifter at one time had the safest flying record of any aircraft in the history of aviation, but eventually fell from that elevated status in the early '70's. Poor discipline, inexperienced crews, and not keeping up with "state-of-the-art" modifications all contributed. We old fogies who lived through those years still grimace at the memories. It's quite different now—crews are more experienced and cockpit procedures are better. Even the "old girl" herself is improving, i.e. the stretch mod, INS, pressure door and spoiler modification, better radar, GPWS, and altitude reminders. These all have enhanced our safety. On the other hand, however, she is getting older, which may well be the underlying reasons for *future* incidents or accidents. If we assume the improvements will keep us safe we are falsely lulling ourselves toward oblivion. Let's face it, you, "the pilot par excellence," are the *real* determining factor in preventing grim statistics, and "need to know" and "nice to know" still await your choosing.

Casson's unabridged dictionary defines "need to know" (aviation jargon) as those procedures, numbers, actions, etc. that must be known and/or hopefully performed, without reference to appropriate publications. Translation: we ain't got time to look it up! *Period!* Example: "Sergeant Steelspine, I'm having a runaway nose down trim here at—ah—ah give me a hand pulling, will ya Lieutenant Flash? At 400—no 300 feet, would you get the book out and read through that procedure please?" Or how about: "Lieutenant Flash, when the fog in the cockpit clears here at 39,000 feet, would you check the emergency descent procedure for me?" Neither of these are bold print

Photo courtesy of Lockheed-Georgia.

items per se, but both are obviously in the need-to-know column.

"Nice to know" (aviation jargon) includes *everything else* in the above mentioned pubs.

On that side of the ledger we have some of those semi-useless goodies the flight simulator staff preaches annually. Example: "If you lose B phase of essential power number 1, what off flags will appear on the pilots' panels?" Twelve years and over 3,000 hours in the Starlifter have conditioned me to say, "Sergeant Steelspine, I've got some off flags up here. Let's check our circuit breaker panels." Besides I'd invariably forget which flags were for "B" phase, which flags are "C" phase, or whatever. There are also those closed book questions I miss annually that fall in the same category. Actually, however, it's a compliment to our crews in general that simulator and stan-eval people have to dig so hard to keep their statistics balanced. Between these extremes, however, there's an awful lot of choosing to do, and we must all eventually choose. We can't know it all, but we must know *some*. Time and experience improve one's judgment or choosing ability, but at the same time the book knowledge tends to erode. So repetitive self-study and selective logic must fill the void between simulator sessions and the annual forced testing. Hopefully, when stark terror interrupts the boredom of a midnight mission, we'll all react properly.

The Dash One is our most important need-to-know document. Care and feeding of all the old Starlifter's bodily parts are contained therein (and the same goes for any other MAC flying machine). I strongly suggest you carefully work your way through it section by section—selecting as you go those items you probably won't have time to look up when things go haywire. Then study, tape, write, pantomime, read them out loud to your dog, or use whatever means suits you best, but *learn* them.

Example: Max EGT for starting is _____°C on a C-141? If you remember 455°C—Great! *Nice* to know number—maintenance will appreciate that your EGT only reached 454°C. No lengthy inspection required, but if it exceeds the action point (455°C) you are in trouble. Rapidly rising through _____°C? This requires immediate action to save a hot start and damaged engine. *Need* to know—in this case *400°C*—means to do something now! After the "Start Switch Off" and cool-down motoring you can always ask, "Sergeant Steelspine, what does the book recommend with a max temp of 454°C?"--assuming Lt Flash could read it (Sgt Steelspine and I are both over 40 and we are therefore automatically exempt from any exact readings).

Our Dash 1-1 performance requires some close scrutinizing too. Example: It's *nice* to know that taking off out of Eielson (14,000 foot runway) at 320,000 pounds TOGW with fog, you can reject at go speed with complete electrical failure and still stop with over 2,000 feet remaining, but it's *need* to know that at a lot less weight you can't reject under similar conditions at Iwakuni. In that case reject procedures rapidly become ditching procedures as you take off into the bay with no spoilers or anti-skid. So we also see here that *"need"* versus *"nice"* can change with the circumstances.

Other manuals also require a look-see. The AFM 60-16 and our own 55-141 both stress a working knowledge of terrain and obstacles effecting our flight. Need I say more? Anyhow,

nobody can remember every hill and dale or tower height between points "A" and "B". So what's *"need"* and what's *"nice?"* Not too long ago a Boeing 747 full of 400-plus warm bodies made a missed approach due to bad weather. Rather than stick to the published missed approach profile, the crew accepted a radar vector in the opposite direction nearly 2,000 feet below the minimum sector altitude (oops). Shortly thereafter the GPWS started chortling and while arguing with it, both pilots noticed the radar altimeter winding down rapidly. Fortunately they did the "Pull-up Pull-up" maneuver being requested and cleared the hill with ease by well over a 100 feet. Whew! In this case the crew could have simplified the situation by flying the published SID, STAR, or MAP. When forced to fly a low altitude radar vector in the soup, terrain/obstacle clearance definitely becomes *need* to know.

All you young eager flight examiners out there should not take offense, but many a *nice*-to-know question has been asked (I'm guilty too) while a Q-1, Q-2 or Q-3 hung on the answer. I remember a young McGuire FE back in '65 asked my AC, a rather elderly lieutenant colonel, how wide our C-135 was. "Gosh, I don't know that one," he drawled with furrowed brow.

"Well what if maintenance wants to tow us into the hangar?" the FE pursued.

"I guess I'm in trouble here, cause I don't even know the width of the hangar," he replied with a straight face, which was more than I did. Needless to say the next several hundred questions from Travis to Wake were directed at me. We, as flight examiners, owe it to MAC to ask questions that *"need"* to be known. It sets the example of what should be known. So please don't destroy the miniscule credibility of our esteemed position by asking the "goofies."

At the same time, an evaluee who demonstrates exceptional knowledge in the nice-to-know areas should be identified and praised for that obvious effort and achievement. Conversely, however, those that act and proceed from memory alone when there is ample time to refer and cross-check are asking for trouble. While teaching day 2 in the flight simulator, my young FEAC student elected to turn off his own flight control power switches shortly after depressurizing system 2, due to runaway trim. His co-pilot, your typical "Lt Flash," star-struck by the FEAC student's glamorous performance and esteemed position, failed to notice they were the wrong switches. I wondered to myself as we slow-rolled into Puget Sound if this overconfident jerk would actually do such a thing in the aircraft. In other words, if you don't have to do it *now* by memory, *don't*. These few examples reflect a "selective logic" we must apply when studying our pubs. The safety of any situation demands a proper and timely response—sometimes immediate, sometimes measured. We as professional aviators must meet that demand or find some other line of work—*period.*

In Summary

- Nobody can know it all.
- Sift through the pubs. If you won't have time to look up an item in a crisis—learn it.
- Be flexible and alert, "need" varies with circumstance.
- Don't do by memory those things done safer by reference.
- Get a haircut and stop complaining.

Thanks for listening.

ABOUT THE AUTHOR

A graduate of Parks Air College with a degree in aeronautics, Lieutenant Colonel C. B. "Chad" Casson has amassed over 12,000 hours piloting a variety of military and civil aircraft. He has flown in MAC's active and reserve forces since 1961. When not aviating as a Boeing 747 instructor pilot for Japan Air Lines, Lt Col Casson flies with the 97 MAS (Associate), McChord AFB, Washington where he serves as a C-141 pilot flight examiner. His Air Force experience includes 4,000 hours in the C-141 and IP and FE qualifications in WB-57's and C-135's.

C.R. TERROR

Can the Portly Pilot purge the pounds to pass his physical?

Just how much do you weigh, Major Terror?" snarled Colonel Fang, poking the Pudgy Pilot's paunch. "Don't you have any respect for your body? Well, I don't guess it really matters. After your annual flight physical tomorrow, I'll be rid of you—for good! There's no way under the sun you'll be able to slip past the new Air Force-directed weight standards with that potbelly."

The Portly Pilot was obviously not used to such a completely false and, in his eyes, undeserved tirade.

"Well sir," the Senior Field-grader stammered, "I, er, am going to, ah, diet and should be able to —" C.R. was cut off in midsentence by his growling CO.

"Ha! Don't tell me you're going to try to lose that 'Dunlap' with just 24 hours to go!" teased Colonel Fang, laughing so hard it bordered on hysteria. "Save your breath, Major Terror. Face the fact that by 1100 hours tomorrow, I'll never have to see your fat fingers on one of my airplanes again. Ever. Now get out of my office." With a second thought entering his slashing

mind, Colonel Fang called the "young" major back for one more stab. "One final order, Major Terror." C.R. braced for the last charge. "I want a full report of your 'failed' flight physical as soon as they give you the bad news-- sooner if possible!"

The Pummeled Pilot was crushed, just like so many grapes. And speaking of grapes, the Master of Martinis wished he'd been eating the grapes instead of drinking so much of the bubbly from their fermented juice. He wandered into the squadron operations center, his eyes glassy and his mind further out in left field than usual. MAC's most senior major contemplated his fate after the inevitable, almost-certainly-failed future flight physical.

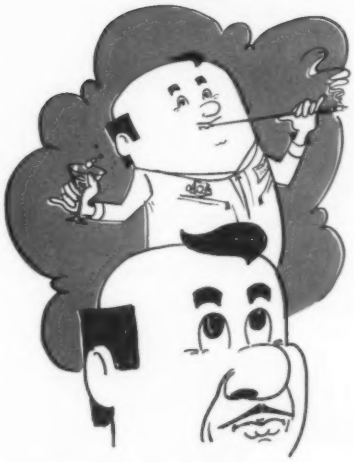
"Hi, Boss," long suffering Sam greeted his honcho with his usual enthusiasm. C.R., though, didn't seem to notice, his eyes staring a jillion miles out into the twilight zone. "I said hi, Boss. Major Terror? It's me, Sammy. Wake up!" implored the concerned company-grader, gently shaking his Mummified Mentor.

"Oh! It's you, Sammy. I was hoping some young angel would have found my soul before I had to face Colonel Fang again."

"I'm afraid I don't understand, Boss."

"Sammy," asked the Flabby Field-grader, "how does one lose 10 pounds in 24 hours?"

The light dawned on Sammy. "Let me guess. You have a flight physical tomorrow, and the CO



knows you won't pass it due to the new weight standards. Therefore, he's happy and you're . . . ."

"I can see all those years as my copilot have taught you a lot about insight, Sammy m'lad. You're exactly right. Sammy, I need help. What can I do?"

Sam thought for a moment, then suggested, "Leave off the burritos and beans for a start. You need to exercise, regularly. And forget those gold-ring Egyptian Ovals. They rank at the top of the Sugeon General's list for most tar and nicotine in a cigarette."

"Quit smoking? Exercise? Next you'll tell me I must cease perfecting the Terrorific 'tini."

"While I'm at it, that was the very next item of don'ts. Let's face it," Sammy continued, "if you were what you ate, you'd be a 300 pound burrito, puffing a cigarette, with a martini in one hand and Tassels in the other."

"Sammy," pleaded the Aviator with Avoirdupois, "will you help me? Please?"

"Sure, Boss," said Sammy. "We'll try, but don't expect miracles, especially with just 24 hours to go."

For the next 8 hours, Sam put the Rhinestone Flyboy through every exercise known to man. Starting slowly, the physically fit second-seater steadily increased the repetition of each exercise until he had C.R. doing 10 push-ups—in 10 minutes. Then the Dynamic Duo hit the track for some "heavy" running, especially in C.R.'s case. After 5 minutes, the huffin', puffin' major finally reached the starting point for the first lap—and promptly fell flat on his nose.

"Arrgh! I can't go on, Sammy. Where are my retirement papers? Huff, puff. Wheeze, gasp!"

"Nonsense, Boss! We've only just begun," chortled the fit second fiddle. Sammy stopped to brush the dust from his mentor's nose and — 1950's vintage track suit. "Just a few more laps and we'll call it quits. I figure by that time, you'll be down to your fighting weight. At least you'll be under your maximum weight for your physical."

C.R. rose haltingly on his pudgy "Sloth"-brand running shoes and hit the track for another "assault." After 30 minutes, he had finally completed the mile and a half Sammy had required. "Steam room's next, Boss," Sammy directed.

"I hurt all over from the inside out! Owww!" the Aching

Aeronaut heaved. "I can't have any fat left. It's all aching muscle and joints. Ooohhh!"

"Most of what you've lost today is just water, boss," observed Sammy. "To really lose the fat, you've got to stick to the diet and exercise program I've outlined. Now, just a few minutes in the sauna may melt an additional pound or two off, but that's all we can hope for without dehydrating you too much. And afterward, I'm going to personally see that you go straight home and go to bed."

"But happy hour, m'lad. Tassles will be waiting at the club," C.R. whined. "Just one little Terrorific 'tini can't do any harm."

Sammy shook his head, then intoned, "That may be true, sir. But that one martini with Tassels may be the last one you drink—as an Air Force officer. But it's up to you, Chief."

"Right, Sammy, taps at 1930 sharp," replied the "Reformed" Field-grader.

C.R. was jolted from his morning "day dream" by the booming voice of the master sergeant medico. "On the top line put your last name, first name, middle initial. On the next line put your grade, social security number and sex. On the third line put your organization and duty phone . . . ." The admin type repeated similar instructions for each of the seemingly endless forms neatly stacked on each examinee's clipboard.

"It's inhuman to write this much," remarked the Magnificent Major. "I haven't had to write this much since the first HATR I wrote back in '58. Come to think of it, that was my last one too." With his inflamed fingers fidgeting, he managed to scrawl a barely legible "excellent" in the last block labelled, "describe your health in one word." Then the physical began in earnest.

For the next hour, the Master Manipulator was poked, prodded, punctured and photographed. Not one square milimeter of his body was left untouched by either man or machine. The young medicos took his blood pressure and then they took his blood. Audiologists tested his hearing, while others tested his eyesight, his reflexes and his feet. Still, no one had asked him to step up on the infamous scales, and the Rotund One didn't exactly jump to volunteer that information. "After all," he reasoned, "what they don't know won't hurt me." Finally, after the last corpsman had punctured his pathetic physique, C.R. Terror was called in to see the flight surgeon. He walked through the doc's office door as if he were walking the "last mile."

"Frank, you ole horse doctor. How the heck are you?" C.R. blurted, instantly recognizing his old "watering hole" comrade.

"C.R.? C.R. Terror? Why you old accident waiting to happen. You old barnstormer! I haven't seen you since my active duty days."

"Well, well, Frank N. Stein! I thought you got out for good long ago," insisted the Loquacious Lothario. "Do you still remember how to make a terrorific 'tini? And do they still call you 'monster?'"

"Nobody calls me that anymore. And, as you can see, I stayed in the Reserves. Couldn't stand to make a complete separation with the 'blue-suiters!'" the former professional linebacker-turned-physician replied. "And I long ago gave up drinking the hard stuff, especially martinis. Clogs up the old arteries and wreaks havoc with the triglyceride level, you know."

"I like them," C.R. defended,

his pride twinged.

"You would!" volleyed the flight surgeon. "You invented that rot-gut namesake." The obviously robust flight surgeon continued his lecture. "I guess you could say I've gotten into the nutrition end of the exercise and nutrition cycle. Sort of like Dr. Pimican. I've cut down on the red meats and increased my intake of vegetables. Of course, you remember how I was about exercise?"

"Of course," replied C.R. half-heartedly.

"And one more thing," the fit fly doc exclaimed, "very little to no alcohol!"

"Right you are, Frank old boy. Why, I was just saying to Tassels last night"—the Fibbing Flyboy was cut off in midsentence by the former football star.

"I believe you, C.R., I believe you. Now let's get down to business and see how your body has fared these many years." With that, Major Stein looked at the test results on top of C.R.'s clipboard. In typical medical fashion, he hummed and ah'ed, perusing each form with an icy stare. Finally he began to give C. R. *the* news.

"Well, old friend, sit down and I'll tell you what's wrong with you. On second thought, I'll tell you what's right. That'll take less time."

"Oh, no," C.R. gasped. "Is it that bad?"

"Well, it isn't great and it could be a lot better." Dr. Stein continued his assessment of C.R.'s health. "Let's start with your blood pressure. It's 136 over 86, which is on the high side of normal. You can't let it get any higher. Not one iota higher, okay?"

"Right, Frank."

"Your triglyceride and cholesterol levels are right on the border line. Lay off the fatty foods, the french-fries—that sort of thing. Understood?"

"Absolutely!"

"That includes Terrorific 'tinis and gold-ring Egyptian Ovals. But especially the 'tinis! I can't emphasize that enough, C.R."

"But Frank—"

"Old buddy, it's either lay off or lay down— 6 feet under—for good. Read me, C.R.?"

"Gulp!! Lay off the Terrorific 'tinis," the Worried Warrior

choked.

"And other than a few other minor things, you're cleared as filed till next year."

"You mean I pass?" shouted the Magnificent Major leaping from his seat.

"Ooops! I spoke too soon. Looks like someone forgot to weigh you and get your height. Hop on the scales and we'll be done till next year. Won't take but a second."

Suddenly, a cold sweat broke out on the Ambient Aviator's ample brow. He could hear the echoes of Colonel Fang's ominous prediction, "There are no miracles. You'll never pass your physical. Ha, ha, ha!"

"What's the matter, C.R.? You look as if you've seen a ghost," Frank asked his old cronie. "Come on. I've got more patients to see this morning." C.R. winced as he climbed haltingly onto the cold steel scales. The pendulum holding the counter weights slammed up against the stops very nearly cracking the mount.

"Ummm! Interesting," commented Major Stein. He then moved the counter weights slowly along until he balanced the pointer exactly between the two stops. "Let's see now. At your height, you ought to weigh about" .... Again the doctor referred to his height/weight chart to see where the senior field-grader would fall.

"I don't know how you do it, C.R. You just squeaked by on the weight limitation—one pound under your absolute maximum. But, of course, you could stand to lose a *few score* pounds, anyway," chided Stein helpfully.

C.R.'s little eyes slammed open in a wide-eyed stare. "You mean I'm *really* cleared to fly this time? I mean, no strings attached at all?"

"Other than what we've already discussed, I don't want to see you in this office till next year. Except for a friendly chat about the old times, okay?"

"You have yourself a deal, Frank," beamed the Ace of Airlift shaking his friend's hand. Then he wondered aloud, "I wonder what Colonel Fang will say about this?"

"Who's Colonel Fang?" asked Dr. Stein.

"You wouldn't know him Doc," remarked the triumphant Titan of the Airways as he skipped out of the doctor's office.

QUICK STOPPERS

Drop That Gun!

A UH-1N crew was conducting initial aerial gunnery training at 200 feet AGL and 50 knots airspeed. During this training the right M-60 machine gun jammed. The student flight engineer attempted to clear the gun as a flight examiner supervised his actions. Meanwhile, the barrel assembly separated from the receiver group and fell to the ground. Fortunately, the gun impacted on U.S. government property and caused no damage or injuries. The crew was unable to locate the assembly on the ground after they landed at the nearest helipad. The mishap investigation could not determine the reason for the loss of the barrel.

Another Bird Attack

Another bird has learned the hard way that trying to mate with a twirling turbofan can be hazardous to its health. Some of its remains were found in the engine inlet just forward of four bent fan blades. Evidently the crew was unaware of the birdstrike because there were no cockpit indications of the bent fan. The Galaxy birdstrike probably occurred either on departure from Europe or landing back in the U.S. Birds are still out there and they still haven't perfected their midair collision avoidance techniques. Keep your lights on and your eyes out!

—436 MAW *Flying Safety Highlights*

Hijacked!

Shortly after takeoff from Miami, a man attempted to hijack a commercial flight. The hijacker threatened to ignite some paper in the aircraft passenger section and held up a sign saying "Cuba." The cabin crew notified the Captain and a Spanish-speaking flight attendant began to talk to the hijacker. The hijacker claimed to have a bomb and several friends aboard. If his demands were not met he said his friends would set fire to the aircraft. The flight attendants casually checked the other passengers onboard. None appeared to be the type that would be associates of the hijacker.

The Captain notified the authorities and discussed the situation. The crew planned to overpower the hijacker when he entered the flight station. When the cockpit door was opened, the hijacker was confused by the instruments and refused to enter. About this time, a male flight attendant jumped him from behind and the Captain and the Second Officer joined in. It was difficult to subdue him and he had to be literally beaten into submission. The flight returned to Miami and the hijacker was carried away. In this particular case the hijacking was thwarted. Hijacking also continues to be a threat to MAC aircrews. Spending some extra time reviewing our anti-hijacking procedures might be timely and appropriate for us all.

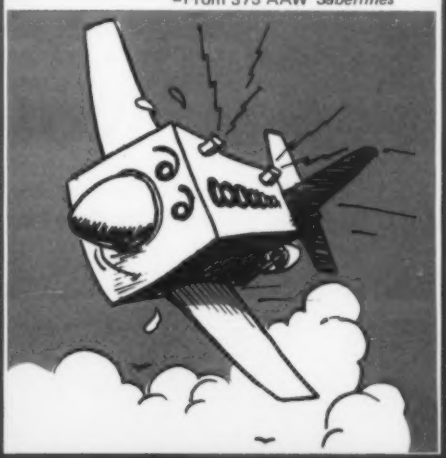
–Adapted from Delta Airlines' *Up Front*

Battery Flight

A Sabreliner experienced dual DC generator failure approximately 180 nautical miles from home station. The CT-39 crew began flight manual procedures for electrical failure. Neither generator would reset and the aircraft was down to battery power only. The crew requested and received a heading from ARTCC direct for their home base.

One step in the electrical failure checklist for dual DC generator failure is to "land as soon as possible." This particular crew overflew two suitable landing fields on their way back to home base. The 45 minute figure in the flight manual for battery duration is based on new, fully-charged batteries. The decision to continue all the way to home station was a risky one. In this incident, battery power was lost entering the VFR traffic pattern. With no battery power, no warning lights are available in the CT-39. If other problems had occurred the crew might never have known it until too late.

–From 375 AAW *Saberlines*



Qs

Herk Gets the Fork

A Hercules crew was performing an engines-running offload at an enroute stop. After the loadmaster briefed the offload crew, a bare tine forklift was positioned behind the aircraft. According to witnesses the forklift operator raised the tines slightly just as the pallet was moving onto the tines. As the tines moved upward, the edge of the pallet contacted the rollers. The rollers were bent as they were pulled from their attachment points. The forklift operator drove away with the pallet and did not return to the aircraft. Strict adherence to the loading supervisor's instructions could have prevented this Herk from getting the fork from the MHE operator.

Notable Quote

Listen. The clearance you hear may belong to someone else.

–USN *Weekly Summary*

AFTER DEADLINES

C.R.TERROR WANTS YOU--to be the editor of the world's greatest flying safety magazine, The MAC Flyer. That's right, we're looking for a newly-minted rated major for the Supervising Editor's job in the August-September 1982 time frame. A strong desire to write and talent to manage MAC's Safety Education and Awards Division is essential. A journalism, public relations background or equivalent, plus flying safety experience are definite assets. If it sounds good (and it is!) write to: Director of Safety, HQ MAC/IGF, Scott AFB, Illinois 62225, or call autovon 638-3528.

••••• SYSTEMS UPDATE •••••

C-5 GPWS AND INS MODS COMPLETED. The C-5 ground proximity warning system (GPWS) modification and the C-5 triple INS installation were completed in August 1981. The GPWS provides C-5 aircrews with an audio and visual warning under certain unsafe configurations during flight including excessive descent rate, excessive closure rate, negative climb rate or unsafe terrain clearance. C-5 triple INS uses three Delco Carousel IV-E INS's. These inertial navigation systems were installed to reduce the complexity and annual support cost of previously installed C-5 navigation avionics. Information courtesy of SA-ALC/MMSG.

C-141B "STRETCH" PROGRAM PASSES 200. C-141B, 64-0639, belonging to the 438th MAW at McGuire AFB, New Jersey, was the 200th Starlifter to be stretched at the Lockheed-Georgia Company in Marietta, Georgia. This aircraft was flight accepted by the Air Force and delivered to home station during November 1981. As of 4 January 1982, 209 C-141B's have been flight accepted by the Air Force.

H-X SOURCE SELECTION. In spring 1982 the Air Force Systems Command source selection team for the H-X (now designated the HH-60D) will meet to evaluate contractor avionics proposals for the new aircraft. The HH-60D will be a derivative of the US Army's UH-60A Blackhawk helicopter produced by the Sikorsky Aircraft Company. The HH-60D will be used especially for combat rescue and special operations missions. Changes to the UH-60A helicopter will be advanced avionics including terrain following/terrain avoidance radar, forward looking infrared radar, projected map display, improved doppler/inertial navigation system, and central avionics computer. Other changes will include aerial refueling capability, external auxillary fuel tanks, improved engines, improved rescue hoist, and defensive armament. Members of the MAC and ARRS staffs and representatives from operational rescue units will be a part of the source selection team. Contract award should be in late summer 1982 with delivery of the first operational helicopter in 1986. Information courtesy of HQ MAC/CSXH.

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Touch 'n' Go

Are you sure the guy at the billeting desk didn't say hang a *left* at bldg. 303?